REMARKS

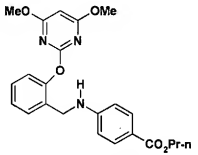
Claims 1-15 were pending in this application when the present Office Action was mailed (May 14, 2008). In this response, claim 1 has been amended, and claims 16-20 have been added. Accordingly, claims 1-20 are currently pending.

As a preliminary matter, the undersigned attorney wishes to thank the Examiner for engaging in a telephone interview on August 13, 2008. During the telephone interview, the Examiner and the undersigned attorney discussed the claimed subject matter and the teachings in the applied references. The Examiner suggested amendments to the claims, which have been incorporated. The following remarks summarize and expand upon the points discussed during the August 13, 2008 telephone interview. The applicants accordingly request that this paper constitute the applicants' Interview Summary. If the Examiner notices any deficiencies in this regard, the Examiner is encouraged to contact the undersigned attorney.

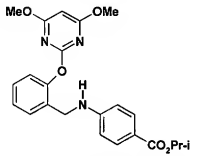
In the May 14, 2008 Office Action, claims 1-13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. Patent No. 6,800,590 to Lu et al. ("Lu") and U.S. Patent No. 6,683,027 to Balstruschat et al. ("Balstruschat"). Before addressing the rejections with respect to claims 1-13, the applicants would like to point out that claims 14 and 15 are also pending in the present application as discussed during the August 13, 2008 telephone interview. Accordingly, the applicants respectfully request clarification regarding the status of claims 14 and 15, which were not discussed in the present Office Action. With respect to the Section 103 rejection of claims 1-13, even though the applicants respectfully disagree with the merits of these rejections, claim 1 has been amended as suggested by the Examiner to further clarify the claimed subject matter.

Claim 1 is directed toward a herbicidal composition that includes a pyrimidinyl benzylamine herbicide as an active ingredient and at least one herbicide selected from a group consisting of acetyl-CoA carboxylase (ACCase) inhibitors, chloroamide

herbicides, ethametsulfuron, and benazolin, said pyrimidinyl benzylamine herbicide being Pyribambenz-propyl or Pyribambenz-isopropyl with the following structures.



Pyribambenz-propyl
Propyl 4-{[2-[(4,6-dimethoxypyrimidin-2-yl)oxy]benzyl]amino}benzoate



Pyribambenz-isopropyl
isopropyl 4-{[2-[(4,6-dimethoxypyrimidin-2-yl)oxy]benzyl]amino}benzoate

Components of the herbicidal composition have a synergistic effect.

Claim 1 is patentable over the combination of Lu and Balstruschat because the evidence provided in the present Office Action does not support a *prima facie* case of obviousness. In the April 11, 2008 Office Action, the Examiner stated that because the individual components of the composition of claim 1 are known to be effective against broadleaf weeds and annual grasses, "one of ordinary skill would combine the components for the benefit of broadening the activity against weeds and grasses." (April 11, 2008, Office Action, page 5). The applicants respectfully disagree with such reasoning because neither Lu nor Balstruschat teach that combining a pyrimidinyl benzylamine herbicide with at least one of acetyl-CoA carboxylase (ACCase) inhibitors, chloroamide herbicides, ethametsulfuron, and benazolin would have synergistic effect to broaden the activity against weeds and grasses beyond that available by simply summing the effects of individual components. As understood by one skilled in the art, combining various weed controlling compositions does not predictably yield the synergistic effect to achieve broadened activity because the actual herbicidal activities of the combined compositions are not predictable. For example, according to Balstruschat, it was surprising, not expected, that combining 2-phenyl-4-(hetero-) acryloxypyrimidines with a compound active against broad-leaved weeds and/or annual

grasses yielded a synergistic effect even though all these components were known to be effective against broad-leaved weeds and/or annual grasses. (Balstruschat at column 2, lines 10-26). Further, Balstruschat does not teach that combining other active ingredients with a compound active against broad-leaved weeds and/or annual grasses would produce similar synergistic effect. Accordingly, one of ordinary skill would not expect that replacing Balstruschat's 2-phenyl-4-(hetero-) acryloxypyrimidines with a pyrimidinyl benzylamine herbicide would yield similarly broadened activity against weeds and grasses.

The following discussion illustrates the unexpected synergistic effect of several embodiments of the claimed herbicidal composition of claim 1. As discussed in Balstruschat, a mixture of herbicides shows synergistic effect if the herbicidal activity of the mixture is greater than a sum of activities of separately applied compounds. The expected herbicidal activity for a given mixture of two or three herbicide can be calculated as follows:

$$E_0=x+y-xy/100$$

where X is a percentage of growth inhibition upon treatment with herbicide 1 at a dose of p g/ha compared with an untreated control (x=0%);

Y is a percentage of growth inhibition upon treatment with herbicide 2 at a dose of q g/ha compared with an untreated control;

E_0 is the expected herbicidal effect upon treatment as a percent of growth inhibition compared with untreated control with a combination of herbicides 1 and 2 at a dose of p+q g/ha ,respectively.

E is the actual observed weed growth inhibition ability of the mixture.

As discussed in the specification as filed, the inventors unexpectedly discovered that, compared with single dosages, several embodiments of the compositions in claim 1 have a synergistic effect for a broadened spectrum of weed control and increased herbicidal activity. The results indicate that several embodiments of the composition

have herbicidal activities can exceed individual activity of 2-pyrimidinyloxy-N-amidophenylbenzylamine, acetyl-CoA carboxylase (ACCase) inhibitors, chloroamide herbicides, ethametsulfuron, or benazolin. Moreover, the inventors unexpectedly discovered that several embodiments of the compositions in claim 1 can completely prevent certain weeds at low dosages while being safe to objective crops. The tables of examples below demonstrate such synergistic effect by presenting the expected and actual herbicidal activities of several embodiments of the composition in claim 1 based on data presented in the specification as filed at, for example, pages 36-45. The species acronym definitions are presented in the specification at pages 34 and 35.

Example 1

Herbicidal performance of the mixture 2-halo-4-D,6-E-substituted pyrimidine + quizalofop-ethyl against grass weeds in post-emergence application is listed below.

Dose (g/ha)	species	Compound A alone (% control)	quizalofop-ethyl alone (% control)	E	E_0
30+6	POAAN	20	10	60	28
	BECSY	0	95	100	95
30+9	POAAN	20	10	60	28
	BECSY	0	95	100	95
30+12	POAAN	20	10	60	28
	BECSY	0	98	100	98
30+15	POAAN	20	10	60	28
	BECSY	0	98	100	98
45+6	POAAN	30	0	90	30
	BECSY	0	95	100	95
45+9	POAAN	30	10	90	37
	BECSY	0	95	100	95
45+12	POAAN	30	10	90	37
	BECSY	0	98	100	98
45+15	POAAN	30	10	90	37
	BECSY	0	98	100	98

Example 2

Herbicidal performance of the mixture 2-methylsulfonyl-4-D,6-E-substituted pyrimidine + quizalofop-ethyl against grass weeds in post-emergence application is listed below.

Dose (g/ha)	species	Compound B alone (% control)	quizalofop-ethyl alone (% control)	E	E_0
30+6	POAAN	60	0	95	60
	BECSY	30	95	98	96.5
30+9	POAAN	60	10	95	64
	BECSY	30	95	98	96.5
30+12	POAAN	60	10	95	64
	BECSY	30	95	98	96.5
30+15	POAAN	60	10	95	64
	BECSY	30	98	100	98.6
45+6	POAAN	90	0	100	90
	BECSY	30	95	98	96.5
45+9	POAAN	90	10	100	91
	BECSY	30	95	100	96.5
45+12	POAAN	90	10	100	91
	BECSY	30	98	100	98.6
45+15	POAAN	90	10	100	91
	BECSY	30	98	100	98.6

Example 3

Herbicidal performance of the mixture 2-halo-4-D,6-E-substituted pyrimidine + ethametsulfuron against broad-leaf weeds in pre-emergence application is listed below.

Dose (g/ha)	species	Compound A alone (% control)	ethametsulfuron alone (% control)	E	E_0
30+6	GALAP	0	10	70	10
30+7.5	GALAP	0	40	80	40
30+9	GALAP	0	70	85	70
45+6	GALAP	40	10	70	46
45+7.5	GALAP	40	40	90	64

45+9	GALAP	40	70	90	82

Example 4

Herbicidal performance of the mixture 2-halo-4-D,6-E-substituted pyrimidine + ethametsulfuron against broad-leaf weeds in post-emergence application is listed below.

Dose (g/ha)	species	Compound A alone (% control)	ethametsulfuron alone (% control)	E	E_0
30+6	GALAP	0	85	95	85
30+7.5	GALAP	0	90	95	90
30+9	GALAP	0	90	95	90
45+6	GALAP	0	85	98	85
45+7.5	GALAP	0	90	98	90
45+9	GALAP	0	90	95	90

Example 5

Herbicidal performance of the mixture 2-halo-4-D,6-E-substituted pyrimidine + acetochlor against broad-leaf weeds in post-emergence application is listed below.

Dose (g/ha)	species	Compound A alone (% control)	acetochlor alone (% control)	E	E_0
45+150	GALAP	20	40	60	52
45+300	GALAP	20	50	70	60
45+450	GALAP	20	60	70	68
45+600	GALAP	20	70	80	76

Example 6

Herbicidal performance of the mixture 2-halo-4-D,6-E-substituted pyrimidine + ethametsulfuron+ quizalofop-ethyl against broad-leaf weeds in post-emergence application is listed below.

Dose (g/ha)	species	Compound A alone (% control)	ethametsulfuron alone (% control)	quizalofop-ethyl alone (% control)	E	E_o
30+6+6	GALAP	0	90	0	95	90
	CERAR	40	90	0	100	94
30+6+9	GALAP	0	90	0	95	90
	CERAR	40	90	0	100	94
30+6+12	GALAP	0	90	0	95	90
	CERAR	40	90	0	100	94
30+6+15	GALAP	0	90	0	95	90
	CERAR	40	90	0	100	94
30+9+6	GALAP	0	90	0	95	90
	CERAR	40	90	0	100	94
30+9+9	GALAP	0	90	0	95	90
	CERAR	40	90	0	100	94
30+9+12	GALAP	0	90	0	95	90
	CERAR	40	90	0	100	94
30+9+15	GALAP	0	90	0	95	90
	CERAR	40	90	0	100	94
45+6+6	GALAP	30	90	0	95	93
	CERAR	50	90	0	100	95
45+6+9	CERAR	50	90	0	95	93
45+6+12	GALAP	30	90	0	100	95
	CERAR	50	90	0	95	93
45+6+15	GALAP	30	90	0	100	95
	CERAR	50	90	0	95	93
45+9+6	GALAP	30	90	0	100	95
	CERAR	50	90	0	95	93
45+9+9	GALAP	30	90	0	100	95
	CERAR	50	90	0	95	93
45+9+12	GALAP	30	90	0	100	95
	CERAR	50	90	0	95	93
45+9+15	GALAP	30	90	0	100	95
	CERAR	50	90	0	95	93

Example 7

Herbicidal performance of the mixture 2-methylsulfonyl-4-D,6-E-substituted pyrimidine + ethametsulfuron+ quizalofop-ethyl against broad-leaf weeds in post-emergence application is listed below.

Dose (g/ha)	species	Compound B alone (% control)	ethametsulfuron alone (% control)	quizalofop-ethyl alone (% control)	E	E_0
30+6+6	GALAP	0	90	0	100	90
	CERAR	40	90	0	95	94
30+6+9	GALAP	0	90	0	100	90
	CERAR	40	90	0	95	94
30+6+12	GALAP	0	90	0	100	90
	CERAR	40	90	0	95	94
30+6+15	GALAP	0	90	0	100	90
	CERAR	40	90	0	95	94
30+9+6	GALAP	0	90	0	100	90
	CERAR	40	90	0	95	94
30+9+9	GALAP	0	90	0	100	90
	CERAR	40	90	0	95	94
30+9+12	GALAP	0	90	0	100	90
	CERAR	40	90	0	95	94
30+9+15	GALAP	0	90	0	100	90
	CERAR	40	90	0	95	94
45+6+6	GALAP	10	90	0	100	91
45+6+9	GALAP	10	90	0	100	91
45+6+12	GALAP	10	90	0	100	91
45+6+15	GALAP	10	90	0	100	91
45+9+6	GALAP	10	90	0	100	91
45+9+9	GALAP	10	90	0	100	91
45+9+12	GALAP	10	90	0	100	91
45+9+15	GALAP	10	90	0	100	91

Example 8

Herbicidal performance of the mixture 2-halo-4-D,6-E-substituted pyrimidine + benazolin against broad-leaf weeds in post-emergence application is listed below.

Dose (g/ha)	species	Compound A alone (% control)	benazolin alone (% control)	E	E_0
45+75	GALAP	20	70	80	76
45+150	GALAP	20	90	98	92

Example 9

Herbicidal performance of the mixture compound B + benazolin against broad-leaf weeds in post-emergence application is listed below.

Dose (g/ha)	species	Compound B alone (% control)	benazolin alone (% control)	E	E_0
45+75	GALAP	20	70	80	76
45+150	GALAP	20	90	98	92

Example 10

Herbicidal performance of formulation of 2-halo-4-D,6-E-substitute by combination with above mentioned herbicides against grasses and broad-leaf weeds in post-emergence application is presented. The compositions of the various formulations are listed below:

A. 10% emulsifier (efficient ingredients are 2-halo-4-D,6-E-substituted pyrimidine, and quizalofop-ethyl at a mass ratio of 1:0.2) 450 ml per hectare, 600 ml per hectare;

B. 10% suspension (efficient ingredients are the compounds of 2-halo-4-D,6-E-substituted pyrimidine, ethametsulfuron, a mass ratio of 1:0.2) 450 gram per hectare, 600 gram per hectare;

C. 10% suspension (efficient ingredients are 2-halo-4-D,6-E-substituted pyrimidine, quizalofop-ethyl, and ethametsulfuron at a mass ratio of 1:0.3:0.2) 450gram per hectare, 600 gram per hectare;

D. 75% emulsifier (efficient ingredients are 2-halo-4-D,6-E-substituted pyrimidine at a mass ratio of 1:15) 600 ml per hectare, 750 ml per hectare;

E. 30% emulsifier (efficient ingredients are 2-halo-4-D,6-E-substituted pyrimidine at a mass percent of 1:5) 750 ml per hectare, 900 ml per hectare;

F. 90% acetochlor emulsifier: 450 ml per hectare, 600 ml per hectare;

G. 5% ethametsulfuron wettable powder: 300 gram per hectare, 225 gram per hectare;

H. 5% quizalofop-ethyl emulsifier: 150 ml per hectare, 225 ml per hectare;

I. 2-halo-4-D,6-E-substitute 10% emulsifier: 375 ml per hectare, 525 ml per hectare;

J. 30% benazolin emulsifier: 600 ml per hectare, 750 ml per hectare; and

K. blank for comparison: CK.

Formulation	Dose (/ha)	ALOAE	POLFU	POAAN	BECSY	GALAP	CERAR
A	450ml	95	98	95	98	50	55
	600ml	98	98	95	98	55	60
B	450g	95	95	90	50	95	95
	600g	95	90	95	55	98	95
C	450g	98	98	95	90	95	98
	600g	98	98	98	95	95	98
D	600ml	95	95	95	90	70	75
	750ml	98	98	98	95	75	85
E	750ml	90	80	85	50	100	100
	900ml	98	85	90	65	100	100
F	450ml	80	80	80	75	70	75
	600ml	85	85	85	80	75	80
G	225g	80	80	75	50	90	95
	300g	85	85	80	60	95	98
H	225ml	90	95	95	85	40	45
	300ml	95	95	90	90	50	50
I	375ml	95	80	85	50	50	50
	525ml	100	85	90	65	60	55
J	375ml	95	80	85	50	50	50
	525ml	100	85	90	65	60	55
K	600ml	0	0	0	0	95	95
	750ml	0	0	0	0	100	100

As shown in the tables above, the observed herbicidal activities of several embodiments of the composition in claim 1 are clearly greater than the expected

activities of individual compositions, and thus demonstrating that the combinations are unexpectedly synergistic. Accordingly, for at least this reason, claim 1 is patentable over the combination of Lu and Balstruschat.

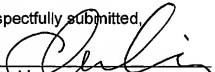
Claims 2-12 depend from claim 1. As a result, these dependent claims are also patentable over the combination of Lu and Balstruschat. Accordingly, the Section 103 rejections of claims 1-13 should be withdrawn.

In view of the foregoing, the pending claims comply with 35 U.S.C. § 112 and are patentable over the applied art. The Applicants accordingly request reconsideration of the application and a Notice of Allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to contact the undersigned attorney at (206) 359-6038.

Please charge any deficiencies or credit any overpayments to our Deposit Account No. 50-0665, under Order No. 42588.8003.US1 from which the undersigned is authorized to draw.

Dated: August 14, 2008

Respectfully submitted,

By 
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